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Directive 2008/96/EC on road infrastructure safety management: an ex-post assessment 5 years after its adoption

A. Sitran [a,*], E. Delhaye [b,c], I. Uccelli [a]

[a]*TRT Trasporti e Territorio, Via Rutilia 10/8, 20141 Milan, Italy*
[b]*Transport&Mobility Leuven, Diestsesteenweg 57, 3012 Leuven, Belgium*
[c]*CES, KULeuven, Naamsestraat 69, 3000 Leuven, Belgium*

Abstract

This research presents the ex-post evaluation results linked to the implementation of Directive 2008/96/EC on road infrastructure safety management (RISM) five years after its adoption. The Directive has led to the establishment of different procedures (Road Safety Impact Assessment, Road Safety Audits, Road Safety Inspections, Network Safety Management) in all Member States, thus increasing their use in comparison with the pre-Directive context. The ex-post evaluation seeks to gauge the degree to which the Directive has been put into practice across the EU countries and identify the main impacts generated by considering a range of evaluation criteria (Implementation, Relevance, Effectiveness, Sustainability, Coherence, Utility, Efficiency and EU added value). The outcomes from the evaluation confirm that Directive 2008/96/EC has encouraged a generalized use of RISM procedures which are now established in all Member States, are based on a minimal set of compulsory rules in the management of the TEN-T roads (in many cases also applied to non-TEN-T roads) and are implemented within a harmonized legislative framework. The main weakness of this Directive relates, conversely, to the limited scope of its application as it only applies to the TEN-T road network.

Peer-review under responsibility of Road and Bridge Research Institute (IBDiM)

Keywords: Ex-post pvaluation; road safety; road safety infrastructure management; TEN T-roads

* Corresponding author. Tel.: +39-02-57410380; fax: +39-02-55212845.
E-mail address: sitran@trt.it

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1. Introduction

1.1. Background

Alongside driver behavior and vehicles, infrastructure is widely acknowledged to be the third element of any comprehensive road safety program based on the principle of the integrated approach. Its contribution to improved safety is pivotal: well-designed roads can help users use roads safely and minimize the risk that a crash will occur. Consequently, a sound road engineering and effective road management can greatly contribute to the reduction in the frequency and severity of road traffic accidents.

A strong focus on road safety infrastructure management has been recommended at the EU policy level since the adoption of the White Paper on Transport policy in the year 2001 (EC, 2001) and the European Road Safety Action Program 2003-2010 (EC, 2003) when the ambitious objective to halve the number of fatalities in the EU15[1] from over 40,000 to 20,000 by 2010 (EC, 2001) was launched. This commitment to improving road safety has been renewed in 2010 (EC, 2010), (EC, 2011) by setting a target of reducing road deaths by 50% by 2020, compared to 2010 levels. Progress against this goal is displayed in Fig. 1, which shows that despite recent progress, a year-to-year reduction of at least 6.7% is still needed over the 2010-2020 period to reach the EU28 2020 target (ETSC, 2015).

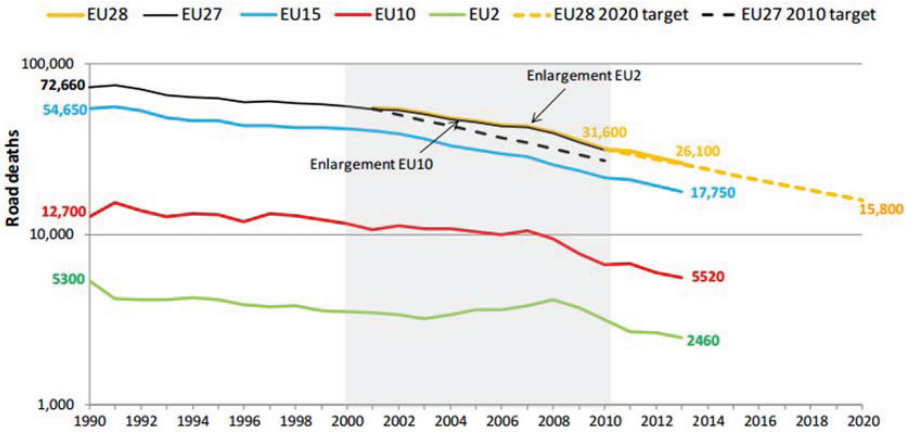

Fig. 1. Reduction in road deaths since 1990 in Europe (log scale). Source: ETSC, 2015.

Accomplishing such an objective requires the implementation of a large spectrum of safety measures, not least to increase the potential that road infrastructure safety measures have in significantly reducing road deaths. This requires taking on a number of challenges, i.e.: (1) a tension between decreasing available public funds against a greater attention paid to the level of road safety; (2) the poor ability of existing roads to absorb increasing traffic flows; (3) the persistent presence of black spots not only on old roads but also on new ones.

To this end, Directive 2008/96/EC on road safety infrastructure management (hereinafter "the Directive") introduces the general principle of safety impact assessment (RSIA) at pre-design stage, of safety audit (RSA) at the design stage, regular inspections (RSI) at operation stage and the ranking of high accident concentration sections, and establishes a comprehensive system of road infrastructure safety management (NSM). The Directive aims, therefore, to ensure that these four procedures (summarized in Table 1) are integrated in all phases of planning, design and operation of the road infrastructure in the TEN-T road network. Also, the Directive encourages Member States to apply its provisions to the rest of the network constructed using EU funding in whole or in part.

[1] Member States in the European Union as of 30 April 2004. The EU15 comprised the following: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom.

Member States were requested to bring into force the provisions laid down in the Directive by 19 December 2010, either by adopting or updating pre-existing national laws. Member States have, indeed been left to establish their own national regulatory frameworks, whereas those already possessing road infrastructure safety management systems were allowed to continue to use their existing methods in so far as they are consistent with the aims of the Directive, while the remaining others were required to implement the new discipline set by the Directive. Eventually, Member States have also ensured that national guidelines were adopted by 19 December 2011 as requested by the Directive.

Table 1. Overview of the RISM procedures.

RISM procedure	Definition and scope
Road Safety Impact Assessment (RSIA)	A RSIA is a strategic comparative analysis of the impact of a new road or a substantial modification to the existing network on the safety performance of the road network, at the initial planning stage before the infrastructure project is approved.
Road Safety Audit (RSA)	A RSA is an independent detailed systematic and technical safety check relating to the design characteristics of a road infrastructure and covers all stages from planning to early operation in order to identify potential unsafe features.
Road Safety Inspection (RSI)	A RSI is an ordinary intermittent verification of the characteristics and defects that require maintenance work for reasons of safety as a preventive tool. RSIs aim to identify potential problems so countermeasures can be taken to remove or minimize the chance of an accident occurring.
Network Safety Management (NSM)	The ranking of high accident concentration sections is a method to identify, analyze and rank sections of the existing road network upon which a large number of accidents in proportion to the traffic flow have occurred. In addition, the network safety ranking is a method to identify, analyze and classify parts of the existing road network according to their potential for safety development and accident cost savings.

Source: Gerlach, 2012

1.2. Research objectives

Despite Directive 2008/96/EC brings a certain degree of uniformity in the management of road safety, performances across Member States and among the different road types remain substantially different. Also, the Directive does not contain any reporting obligation for Member States or for the EC on the implementation and actions taken.

The aim of the research was, therefore, to assess the extent to which the Directive was put into practice during the five years after it was adopted, by meaningfully identify the main impacts generated with its implementation. The difficulties in assessing these impacts were due to two specific reasons:

- A relatively recent timeframe of application. The Directive was brought into force only recently (December 2011). In addition, its provisions deal with road infrastructure, e.g. an area where interventions have long life-cycles and their subsequent changes take time to produce their effects. In particular, this holds true given the current public budget constraints that limit the number of newly undertaken road investments. This complicated the evaluation of the effectiveness of all RISM measures, namely of those that are applied to new roads (e.g. RSIAs and RSAs - although the latter one are applied to existing roads as well).
- Absence of provisions facilitating data collection. The Directive does not impose data collection mechanisms for ex-post evaluation purposes. Consequently, data is often scarce, not always centrally held (for example in federal States) or simply not available. This means that the analysis of the state of the Directive's implementation had to rely to greater extent on estimates based on the available quantitative and qualitative data collected through the literature review and the Member States and Stakeholder survey carried out during the ex-post evaluation.

In the next section we first present the methodology used. Section 3 discusses the results of the literature review. Section 4 presents the Member States and Stakeholder survey. Section 5 is devoted to the analysis of the evaluation results including the main recommendations. Based on these results, section 6 concludes.

2. Methodology

The evaluation exercise was structured into four stages (Fig. 2). The use of different research tools allowed us to validate and cross-check the evidence in accordance with triangulation principles. These included: (i) extensive desk research that collected information on developments in the area of road infrastructure safety management along with information on relevant practices across the different EU countries, (ii) a Member States and Stakeholder survey that provided a comprehensive understanding of the way in which the procedures are implemented, (iii) a Stakeholder workshop to validate the preliminary results and findings attained in the evaluation and, finally, (iv) an interview program that provided an appropriate range of additional information and evidence to support the identification of the main evaluation findings and the development of main conclusions and recommendations.

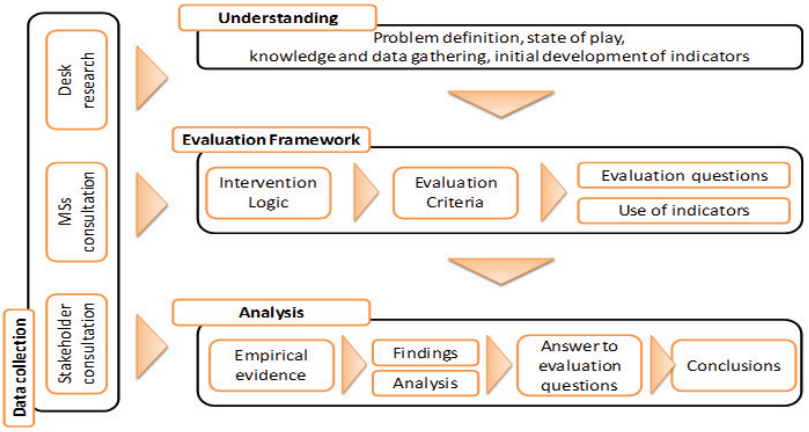

Fig. 2. Structured evaluation approach.

3. Literature review

Most of the literature focuses on the impact of the single procedures and not on the impact of Directive 2008/96/EC as a whole. Therefore, given that the Directive has only recently entered into force, it is difficult to globally estimate and assign to the RISM procedures a specific impact, namely in terms of a reduction of road victims. Before the implementation of the Directive, its impact assessment (EC, 2006) made reference to the thematic network EURORAP II[2], which showed that, even in a country with a good safety record, deaths could be reduced by approximately 20% through a suitable and comprehensive road safety program. The ROSEBUD project (EC, 2006[3]) estimated that the reduction potential for implementing the four procedures to the TEN-T roads would have been a reduction of more than 600 fatalities and about 7,000 injury accidents per year. This corresponded to 12%-16% of the fatalities and 7%-12% of the injury accidents.

For RSAs, TOI & ViaTrafik (2013) made a literature review of experiences and efficacy studies on this technique and concluded that there may be positive effects on road safety, but there are some differences in magnitude (this technique can reduce the number of accidents by 50-70% or approximately 1 to 2.5 accidents per reviewed (audited) location). However, the effect depends on the number of audits performed and the consequences given to the results.

With respect to RSIs, from the literature review it appears that, if the procedure is followed up by the correct measures, this technique can have significant impacts on road safety although these impact are hardly quantifiable in general terms (PIARC, 2012; Elvik &Vaa, 2004 and Elvik, 2008; Laurinavicius ea, 2012). The RiPCORD-iSEREST project (Laurinavicius ea (2012)) also states – though based on very few studies – that a RSI leads to the implementation of measures that can considerably improve road safety. However, it also points out that there is no standardized procedure throughout Europe for how RSIs should actually be carried out.

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[2] EuroRAP II is the acronym for European Road Assessment Programme (http://www.eurorap.org/).

[3] ROSEBUD is an acronym for Road Safety and Environmental Benefit-Cost and Cost-Effectiveness Analysis for Use in Decision-Making. Calculations were made for EU25 plus Bulgaria, Romania and Switzerland. Cited in EC, 2006.

On RSIAs, the RiPCORD-iSEREST project states that there are no evaluation studies available on the effect of performing RSIAs (Eenink, 2008). It does consider it likely, however, that a RSIA influences the choices that are made and that small changes can have enormous (safety and financial) effects. Regarding finally NSM, the RiPCORD-iSEREST project also states that the use of NSM is so new that no effect studies have been made. Nevertheless, it does see a great potential in NSM for saving lives.

4. Member States and stakeholder surveys

An online questionnaire-based survey was carried out with the purpose of collecting evidence from national authorities and a broad range of stakeholders to inform the analysis of the evaluation questions described in next section 5 (Table 2). Specifically designed questions were included into two dedicated questionnaires: one targeting national authorities[4], and one pointing to the interested stakeholders. Along with pre-defined closed questions, Likert-type questions were formulated where the level of agreement was scaled from 1 (total disagreement) to 5 (total agreement). Open questions were also included to provide any relevant information on the implementation of the Directive, namely on road safety impacts and costs-benefits comparison. No significant variation in responses was observed as respondents returned in general homogenous feedback under the distinct question headings.

5. Assessment of the impact of the Directive

The ex-post evaluation provided a response to the request of the EC to gain an independent assessment of the state of implementation of, and impacts produced by Directive 2008/96/EC. A total of 33 evaluation questions (Table 2) were considered under the headings of (i) Implementation, (ii) Relevance, (iii) Effectiveness, (iv) Sustainability, (v) Coherence, (vi) Utility (vii), Efficiency (viii) and (ix) EU Added Value. The ex-post evaluation was conducted according to the EC's Impact Assessment Guidelines (EC, 2009). In the light of the outcome of the ex-post evaluation a number of recommendations were formulated to identify areas for further developments.

Table 2. Overview of the Evaluation criteria and their definition and scope.

Evaluation criteria	Evaluation question
Implementation	1. To what extent were Road Safety Impact Assessments (RSIAs) and Road Safety Audits (RSAs) integrated into the planning, designing and construction phases of Member States?
	2. Is there any difference in the implementation between best performing and worst performing EU Member State?
	3. To what extent and how did member states carry out the directive provisions concerning roads in operation (safety ranking and inspections)?
	4. How has the presence of black spots been effectively communicated to road users?
	5. How has information from accident reports and methodologies for calculating the average social cost influenced road safety ranking and inspections?
	6. How were inspections implemented?
	7. Did the aforementioned procedures influence the planning phases?
	8. Were the procedures applied beyond the trans-European road network?
	9. What were the factors that hampered the implementation of the Directive?
	10. Do Member States have a specific budget allocated to implementing the procedures stipulated in the Directive?
	11. Which authority was responsible before the implementation of the Directive and which authority is now responsible for administering RISM procedures?
	12. What are the criteria (for RSA) applied with respect to the definition of the infrastructure project to be audited on non-TEN-T roads
Relevance	13. To what extent is the obligation for Member States to define procedures for road infrastructure safety management necessary to address the road safety issues, considering that the Directive does not include specifics about the procedures?

[4] 29 replies (response rate of 90%) were received from national authorities: 25 Member States, 2 replies for Belgium (Flanders and Wallonia), 2 replies from non-Member States (Iceland and Switzerland). 28 replies were received from stakeholders (response rate of 43%).

Effectiveness	14. To what extent has the Directive modified the practices and procedures in Member States for the management of Road Safety? Is this change an improvement?
	15. To what extent have the provisions on road safety ranking and management and inspections improved safety maintenance of roads and thus contributed to enhanced road safety?
	16. To what extent have provisions linked to data management contributed to an improved ranking and safety management?
	17. To what extent are these provisions sufficient, in the sense that they allow for a uniform consideration of social costs, to ensure a high and consistent level of safety across the TEN-T?
	18. To what extent has the Directive improved the safety of new roads and affected the planning, design and construction of these new roads?
	19. To what extent has the Directive modified the selection of safety equipment and components (pavement, road signals, lights, barriers, etc.) by road managers?
	20. To what extent has the exchange of good practices contributed to the realization of effects? To what extent did the Directive favor the exchange of good practices?
	21. To what extent is the training and certification of auditors set up in an effective manner in order to allow audits to be conducted?
	22. Have the training provisions impacted the mobility of auditors across Member States?
Sustainability	23. To what extent are the safety procedures set up by the Member States in accordance with the provisions of the Directive likely to remain in the event that intervention ceases at the European level?
Coherence	24. Is the current framework of the Directive adequate in the long run to ensure the deployment of ITS technology in particular for the communication between the vehicle and the infrastructure?
Utility	25. In light of the target of halving road traffic fatalities established in the Policy Orientation for road safety, and with a view to a future similar target for the seriously injured, can the current Directive be considered an adequate instrument
Efficiency	26. To what extent has the Directive generated benefits and costs for road users, road managers and public authorities?
	27. What is the administrative burden generated by the Directive distinguishing between costs for the national administrations and costs for road authorities?
	28. Is there room for a further reduction of these costs?
	29. Did the implementation of the Directive lead to a more efficient and cost saving planning and management of the network in operation?
	30. Have the network safety ranking and black spot management generated additional cost advantages?
EU added value	31. What is the EU added value of the obligation to establish the same practices and procedures in road safety infrastructure management?
	32. Is there a widely recognized exchange of good practices and how does this contribute to the EU added value?
	33. Would it have been possible to obtain the same results in terms of safety management without intervention at EU European level

5.1. Implementation

For implementation, the evaluation assessed the extent to which the requirements stipulated in the Directive are applied by Member States. RISM procedures are today fully established in the national law systems of Member States and preferred pathway was found to be the integration of the provisions laid down by the Directive on the four techniques with pre-existing national streams.

While Directive 2008/96/EC applies only to the TEN-T road network, evidence suggests that its application to non-TEN-T roads happens in the majority of Member States. The degree of compulsion is variable, although there appears in approximately half of Member States some of the RISM procedures are applied to non-TEN-T roads on a mandatory basis. Importantly, it was found that Member States do not earmark funds to carry out the RISM procedures and costs for the latter are generally incorporated in the overall costs of the road project investments.

Finally, data is also not sufficiently available to conclude about a strong statistical correlation between the degree of implementation of the Directive and the road safety performance in a specific Member State. However, evidence suggests that the Member States that presented poorer levels of road safety performance were those where the application of the requirements set by the Directive was more robust.

5.2. Relevance

The evaluation considered the criterion of relevance to investigate if the objectives and implementing measures of Directive 2008/96/EC are appropriate to address the identified needs of the intended beneficiaries.

The Directive has been introduced to address the identified shortcomings and disparities in the manner in which safety of road infrastructure was managed, so to ensure a generalized application of the RISM procedures across all Member States. Compared with the prior system of national legislation, the Directive has led to an improved and much more consistent regulatory framework for spreading the use of the RISM procedures and has made it possible for road administrations to execute an approach to the road infrastructure safety management with a higher level of uniformity. Such uniformity can be, however, be read more on a formal level that on a substantial one. Formally, all procedures are established in the regulatory setting of all Member States, but the latter still need to be extensively secured across them, given that the Directive does not provide any detailed guidance on the application of the RISM procedures, nor harmonization between Member States is prospectively foreseen.

5.3. Effectiveness

The findings for effectiveness considered the extent to which the operational objectives of the Directive have been achieved. Procedures for the management of road safety, as introduced by Directive 2008/96/EC, are considered as being an improvement compared to the pre-Directive situation. In particular, the Directive has led to changes in the operational management of infrastructure-related road safety across Member States, which perceive a more systematic approach in dealing with road safety as the main advantage following the application of the Directive (Table 3).

Table 3. Main (perceived) benefits obtained using the RISM procedures on the TEN-T road network.

Advantages	Scale index of perceived benefits (1 to 5)
Increase in safety management of roads through a more systematic approach	4,0
More efficient use of resources available	2,7
Reduction of costs (both internal and external) for interventions	2,6
Increased public support of road safety	2,6
Other	2,0

Source: Data based on Member States' questionnaires responses (25 Member States plus Belgium-Wallonia and Belgium-Flanders)

Equally, the Directive has marked a progress in comparison with the situation before its adoption as it now provides a common framework and guidance on the general levels of training and skills that are expected from road safety auditors. On this issue, the Directive seeks to overcome pre-existing barriers in terms of different levels of knowledge and requirements (IRF, 2007). However, though they are set up in most of Member States, training programs and certification requirements still widely differs in terms of duration and contents. This can hinder the possibility to implement coherent safety procedures on the whole road network, at Member State and at EU level.

On the contribution to improved road safety, one should also be aware that it is difficult to isolate and allocate the reduction in the number of road victims to the use of, and subsequent impacts from, the RISM procedures. None the less, evidence indicates that those EU countries not having the procedures before the Directive was implemented are, on average, less performing in terms of road safety. Therefore, to the extent the better performance of the other countries is due to implementation of the procedures, their application in the former can be potentially beneficial.

5.4. Sustainability

In relation to sustainability, the evaluation assessed the extent to which positive changes attributable to the implementation of the Directive may be expected to last beyond the period of their implementation.

Directive 2008/96/EC has encouraged the introduction of a EU-wide approach to road infrastructure safety management and the changes brought about in the operation of the Member States' national practices are expected to last in the long run. Despite this, differences in their application still persist. This motivates why the Directive hinges on stronger and more consistent harmonization with a view to set a benchmark of knowledge and evaluation tools across all Member States. Also sustainability of funding sources for undertaking these procedures is key.

5.5. Coherence

Regarding coherence, the evaluation assessed the extent to which the intervention logic is not contradictory with other interventions with similar objectives.

The interplay of Directive 2008/96/EC with Directive 2010/40/EU (known as the "ITS Directive") was assessed in this respect. Directive 2008/96/EC itself does not really focus on ITS and no strong link was found between this Directive and ITS. Consequently, conclusion was that Directive 2008/96/EC does not influence the deployment of ITS in a negative or in a positive way, while other Directives (the ITS Directive, Directive 2007/2/EC known as the "INSPIRE Directive, and Directive 2003/98/EC known as the "OPEN DATA Directive") may have a stronger impact in this respect. Nevertheless, the four areas of: (i) information about infrastructure safety, (ii) use and maintenance of infrastructures, (iii) safe design of infrastructures and (iv) traffic management can be envisaged where deployment of ITS can produce benefit on the infrastructure and where synergies with Directive 2008/96/EC can apply.

5.6. Utility

The evaluation for utility included the extent to which the Directive's impacts respond to the initial needs and problems of the target beneficiaries.

While it has led to the establishment of all RISM procedures in all Member States, Directive 2008/96/EC has especially increased use of those cost-effective procedures (RSAs and RSIs) that have proven were applied to yield positive results in terms of reduction of road casualties. Further, there is indication of a statistical correlation between having lower fatality rates and having road safety procedures, indicating that the Directive will most probably positively impact road safety, and certainly in countries which did not have these procedures in place before. We found that there is a general negative trend in fatality rates over time. Also, when we compare the fatality risk up to 2011 and in the year 2012 we find a significant decrease. This means that the overall introduction of RSM at European scale seems to be associated with a reduction in fatality risk.

5.7. Efficiency

An assessment of efficiency was provided in the evaluation focusing on the relationship between financial inputs and identifiable outcomes, i.e. whether the effects of Directive 2008/96/EC have been achieved at a reasonable cost.

Directive 2008/96/EC has been in force only since 2010 and this implies that its application is still considered to be too recent to acquire an understanding of whether it has led to a more efficient and cost saving planning and management of the network. Mindfully, the procedures regulated by the Directive are only a part of the broad spectrum of tools to continuously improve road safety. This implies that it is not always possible to clearly separate the changes in costs (and benefits) associated with all RISM procedures or even with some of them. Little information is available about their level, not least because the majority of Member States does not estimate the costs for any of the procedures. Evidences collected appear to indicate that the cost for performing the procedures is higher in countries without previous experience on RISM procedures, while administrative costs remain low as in the case of the Member States having pre-Directive RISM procedures in place. Therefore, it is reasonable to infer that, in the mid-term, the application of the Directive does not lead to a further reduction of costs for countries both having and not-having RISM procedures in place before the adoption of the Directive.

The same applies to benefits, that are measured for all procedures only in a limited number of Member States and are, therefore, not easily quantifiable. No specific cost advantages were triggered, since Member States indicate that operating costs for planning and management of the road network have remained almost unchanged. However, the improved understanding of the road sections featuring the highest critical levels in terms of accidents supports the possibility to plan the interventions to be undertaken in advance and in a cost-effective manner. There appears that higher level of administrative and operational efficiency along with a more rigorous application of the procedures are expected, thus allowing the competent authorities to reallocate the resources where they are most needed.

5.8. EU added value

EU added value analyzed the extent to which intervention or activities supported at the EU level bring about changes that would not have occurred through Member States acting independently or cooperating bilaterally.

In this respect, Directive 2008/96/EC had a clear benefit on improving the functioning of the road infrastructure management system since it has requested Member States to have all RISM procedures established in their national law systems and to comply with its requirements within a clear time line. Though contents and practices might be different at national level, a common framework and a common approach is now applied. This outcome could not have been achieved through Member States acting independently in developing (or not) their own comparable legislation which would had led to disparities in their application

5.9. Areas of further improvements

The findings described above help identify a number of areas where improvements to the current legislative setting established with Directive 2008/96/EC can be recommended. First, the scope of the Directive may be extended to cover all motorways. While this would improve traffic safety, it would avoid the large costs involved with an extension of the Directive to all roads. Similarly, the scope of the directive may be extended to cover tunnels falling under Directive 2004/54/EC. This may probably not have a large impact on road safety, but it may contribute to a more coherent approach towards safer road infrastructure.

Also, Directive 2008/96/EC may emphasize the role that infrastructure plays to support the deployment of ITS applications. Finally, efforts may be made towards improving the EU common accident database and accessibility, in particular as far as accident data on the TEN-T network is concerned. This is because the main obstacle in evaluating the application of the Directive was the poor quantity and quality of available data, in particular when costs and benefits are analyzed. On the latter ones, harmonized procedures at EU level for gauging the cost-benefit ratio of road safety treatments may also to be developed, including benchmarking methodologies to track the performance of the Directive as a whole, and of each road infrastructure safety management procedure individually.

6. Conclusion

In this paper we presented the main results of the ex-post assessment of Directive 2008/96/EC on road infrastructure safety management five years after its adoption. This evaluation provides with an updated knowledge regarding the implementation of the RISM procedures. Importantly, it globally assesses them within the context of the Directive and not solely as single technique. This allows to observe their overall expected impact on road fatalities, along with a cost-benefit comparison for their implementation. On the whole, this may help Member States understanding the potential of an integrated approach to road infrastructure safety management, in particular in those where the use of the RISM procedures was less developed in the pre-Directive context.

This evaluation considered a range of issues related to the implementation of the Directive, as well as the efficiency and effectiveness of mechanisms to support its implementation. Among the crosscutting themes examined were the criteria of utility, sustainability and European added value. Collectively, these criteria have aimed to determine the extent to which the Directive has responded to the initial needs and problems of the target beneficiaries, the extent to which positive changes attributable to the Directive may be expected to continue to have an effect, and whether EU level intervention has brought benefits exceeding those that would have occurred through Member States acting independently. Among the issues considered was whether the objectives of the Directive are still relevant to the needs

and problems that were designed to target. Lastly, the question of the extent to which the Directive is coherent with the regulatory framework for ITS set by Directive 2010/40/EU was also central.

While it has been in force for only five years since its adoption, the results of the assessment indicate that Directive 2008/96/EC appears to be a substantially successful directive and represents an important step in the direction of a more systematic discipline on infrastructure safety. As a whole, the Directive has triggered a different way of thinking and dealing with road safety management. It sets out a "common language" for carrying road infrastructure safety management which relies upon a generalized use of the RISM procedures which are now established in all Member States and rooted on a minimum set of compulsory rules in the management of the TEN-T roads (in many cases also extended to the not TEN-T roads). Overall, it has steered a normative and operational process that would not have happened without EC intervention.

The main weakness of this Directive, by contrast, relates to the limited scope of its application, since it only applies to the TEN-T road network and not to non-TEN-T roads which, conversely, provide the highest potential for improving road safety as the majority of accidents occur on these roads. The possibility of extending the requirements stipulated by the Directive to non-TEN-T roads was left to the discretion of Member States and, accordingly, the national legislative settings have been developed by most Member States.

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